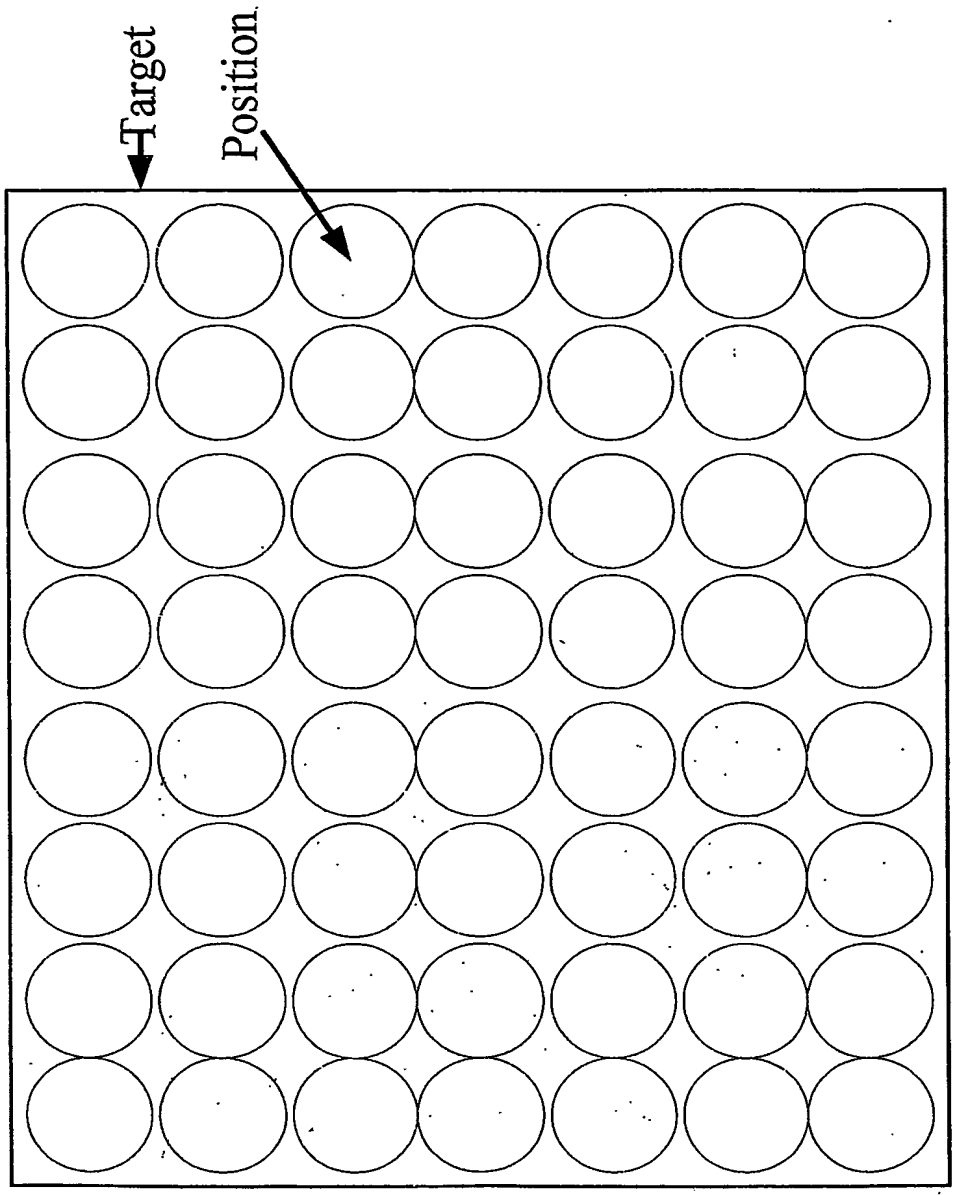
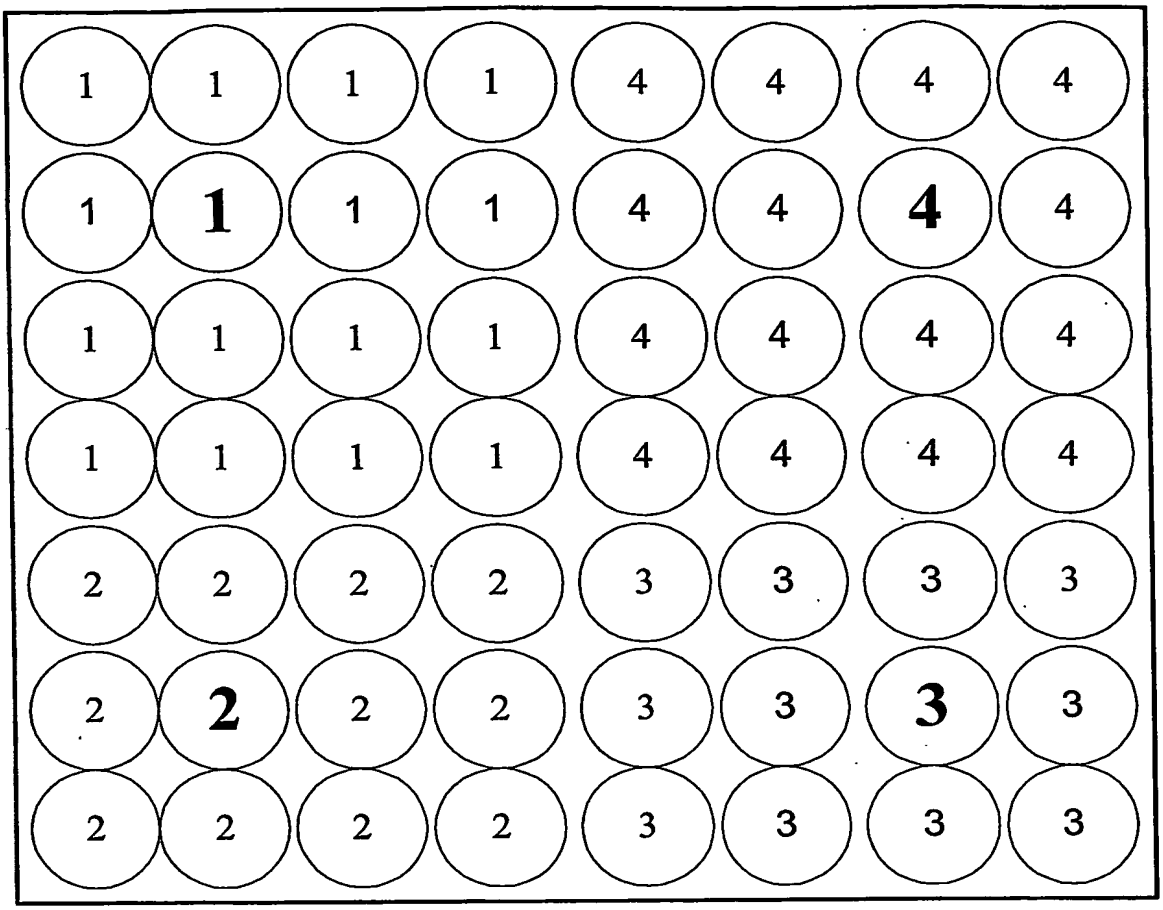


Figure 1: MALDI target.

A


1 1 1 1 4 4 4 4
1 1 1 1 4 4 4 4
1 1 1 1 4 4 4 4
1 1 1 1 4 4 4 4
2 2 2 2 3 3 3 3
2 2 2 2 3 3 3 3
2 2 2 2 3 3 3 3

B

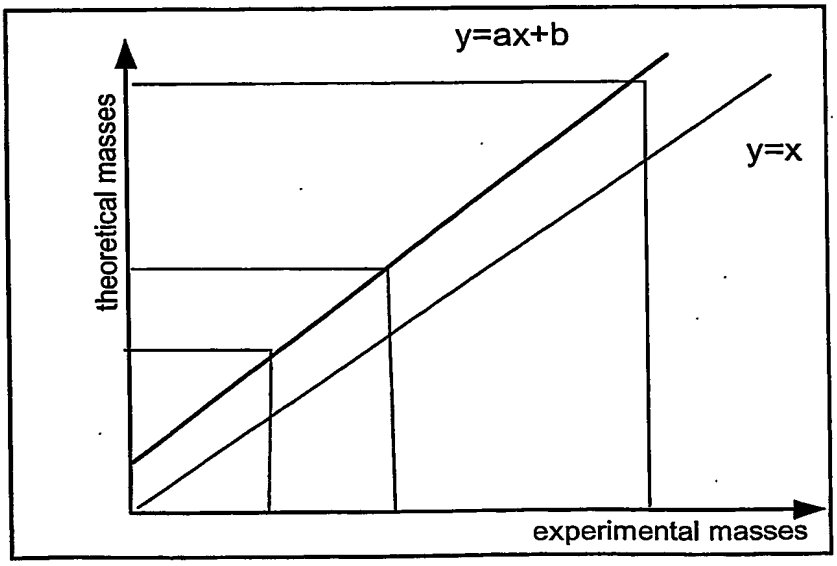
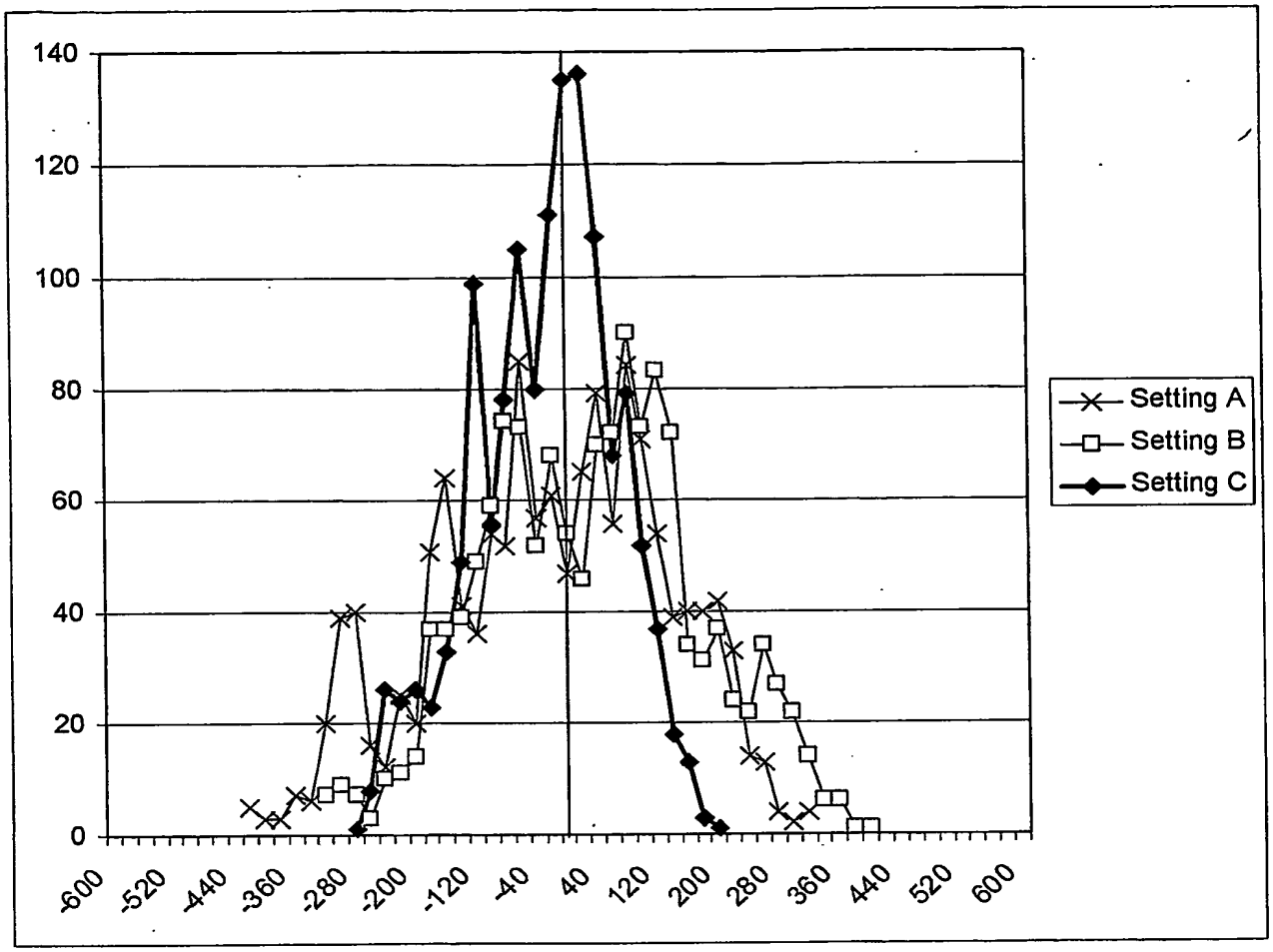

y=ax+b
y=x
theoretical masses
experimental masses

Figure 2

Figure 3a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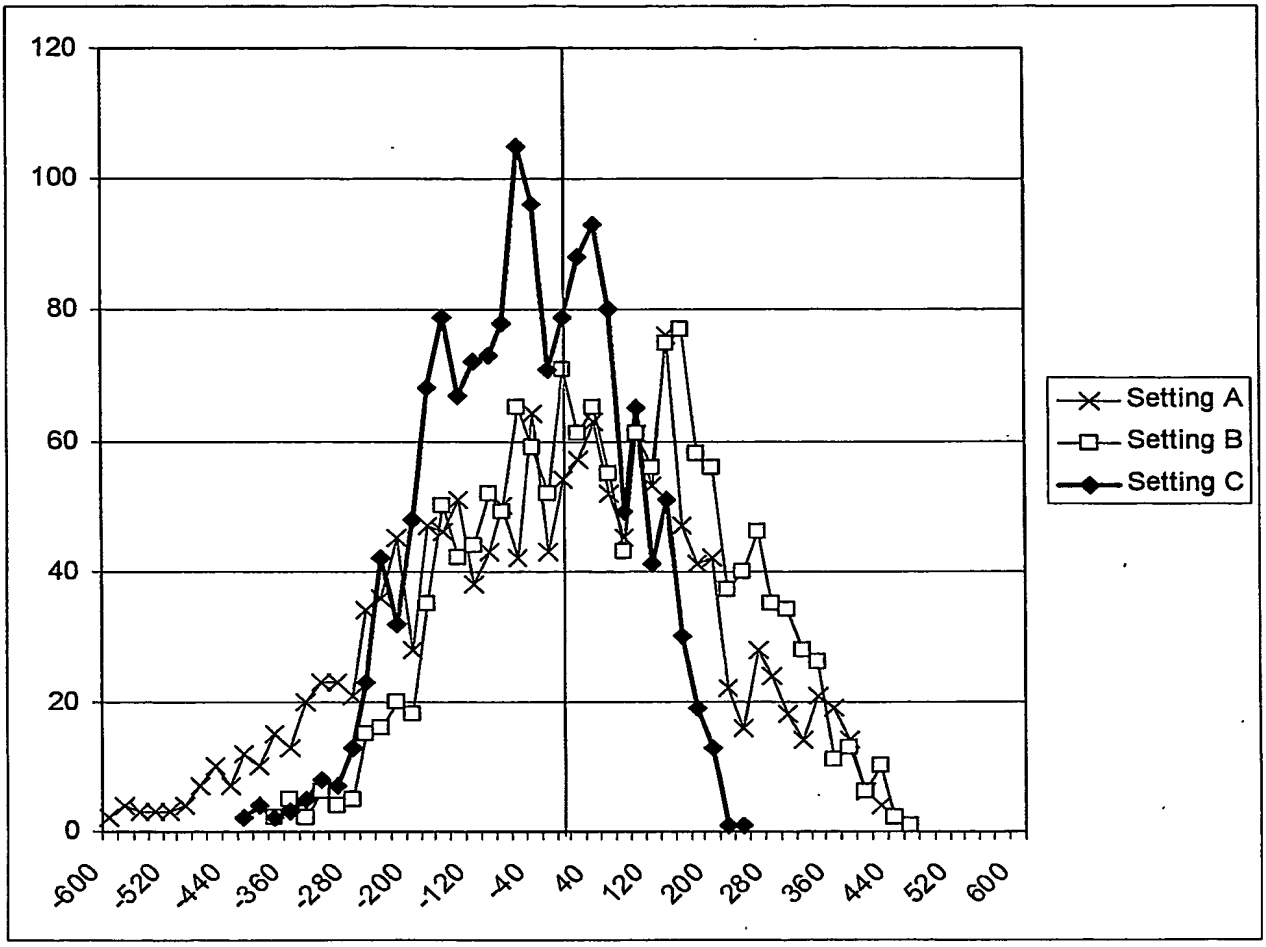
120
100
80
60
40
20
0
-600
-520
-440
-360
-280
-200
-120
-40
40
120
200
280
360
440
520
600
Setting A
Setting B
Setting C

Figure 3b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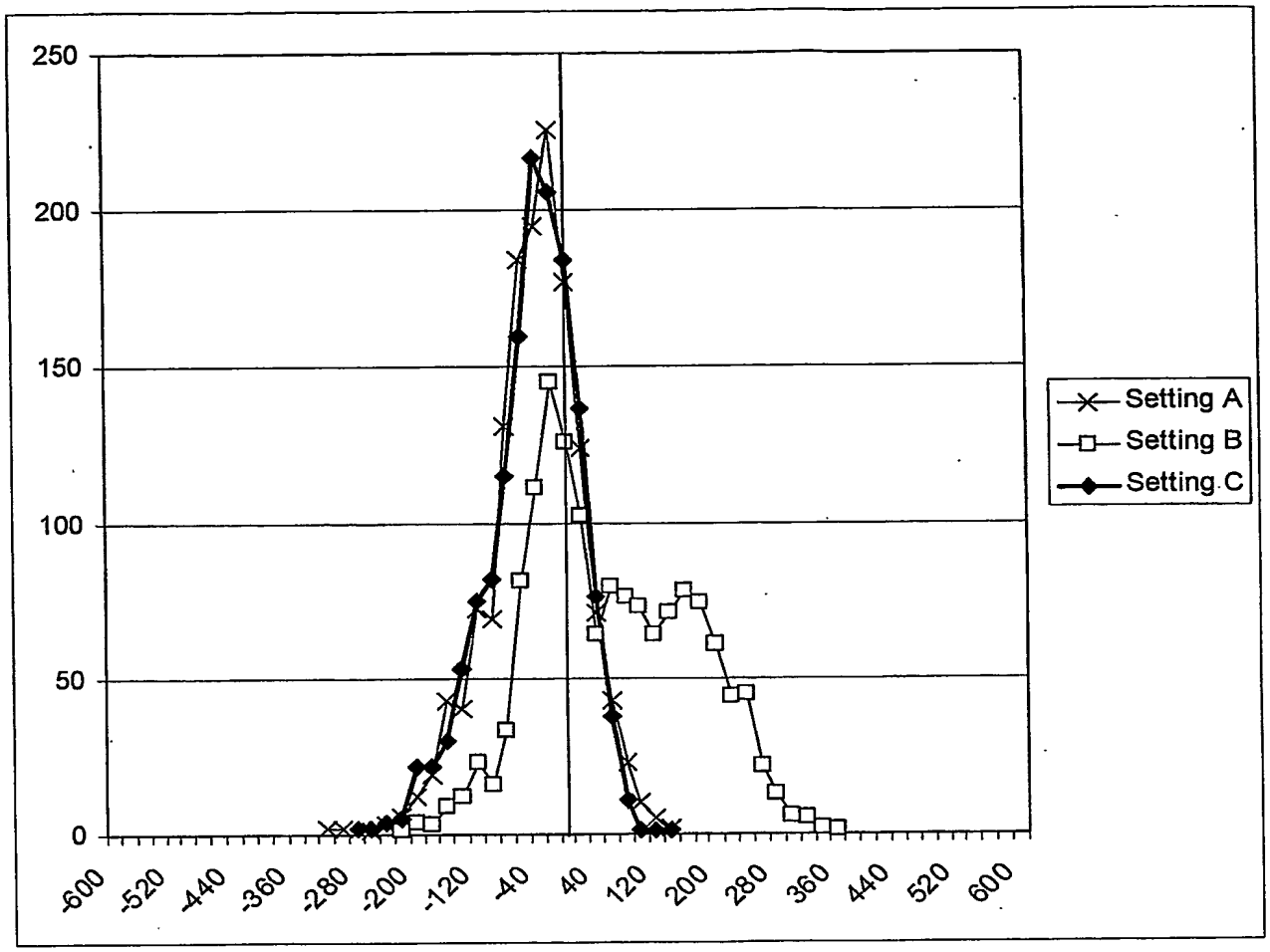
80
60
40
20
0
-600
-520
-440
-360
-280
-200
-120
-40
40
120
200
280
360
440
520
600
Setting A
Setting B
Setting C

Figure 3c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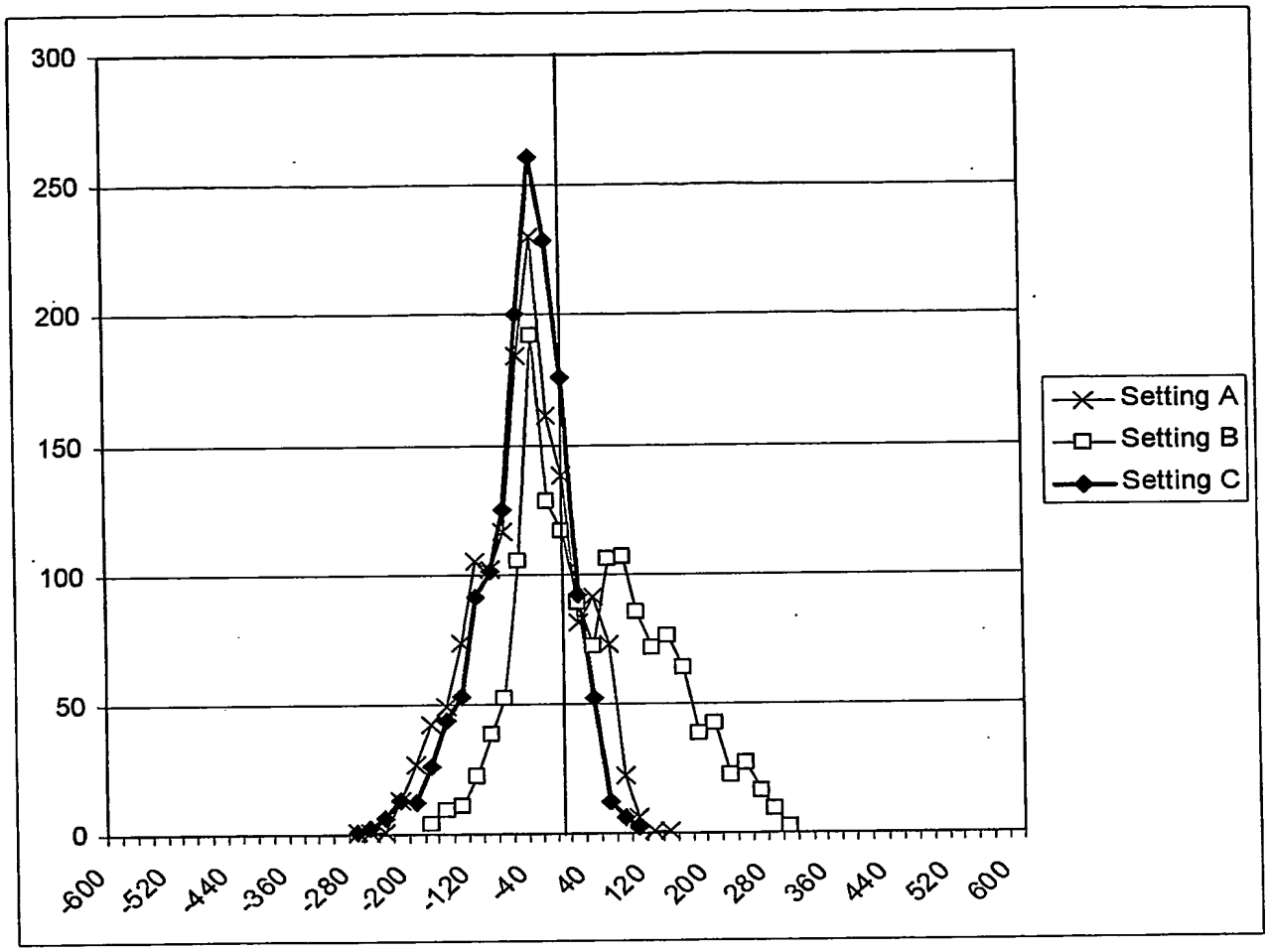
200
150
100
50
0
-600
-520
-440
-360
-280
-200
-120
-40
40
120
200
280
360
440
520
600
Setting A
Setting B
Setting C

Figure 3d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250
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150
100
50
0
-600
-520
-440
-360
-280
-200
-120
-40
40
120
200
280
360
440
520
600
Setting A
Setting B
Setting C

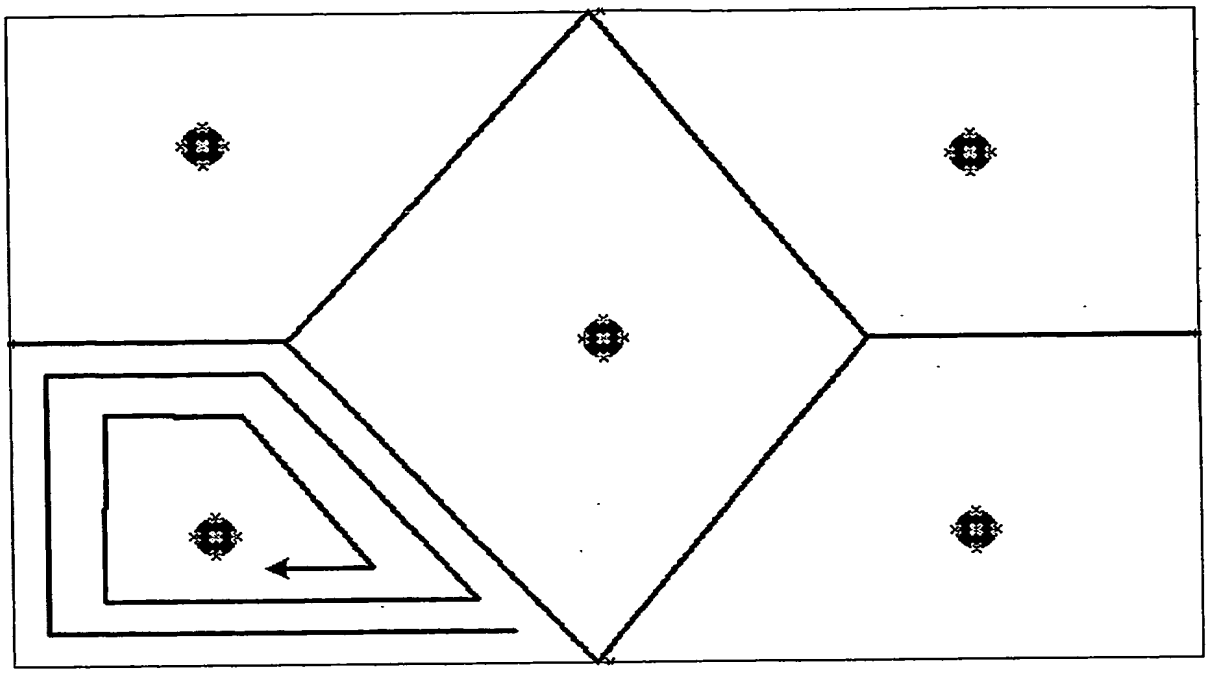

Figure 4

Figure 5

Standards used contain peptides with the following theoretical masses: 1046.5423, 1347.7355, 1619.8229 and 2465.2027 Daltons.
In one plate, **in position D20**, the following masses (default calibration provided by the instrument) are measured: 1046.82, 1348.06, 1620.21 and 2465.90 Daltons. From these experimental masses, an affine correction is computed by linear regression: $y = 0.07411 + 0.999694\ x$.
In **position C19**, the following experimental masses (default calibration) are measured: 1046.80, 1348.03, 1620.18 and 2465.75 Daltons. These correspond to mass errors of 0.2577, 0.2945, 0.3571 and 0.5873 Daltons, respectively. By applying the affine transformation obtained from **position D20**, the masses measured from **position C19** are calibrated as follows: 1046.55, 1347.69, 1619.76 and 2465.07 Daltons. These calibrated masses correspond to mass errors of: –0.01, 0.05, 0.06 and 0.13 Daltons respectively, which is a more than **4-fold improvement** over the default calibration provided by the instrument.
The procedure applied to **position C19** above is subsequently repeated for every position that does not contains standards in the final layout, with **position D20** being replaced by the nearest position containing a standard. See Figure 3 for a global result.